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The Phonology of Salasaca Quichua

Sheldon Peters Waskosky

THE PHONOLOGY OF SALASACA QUICHUA

by

Sheldon Peter Waskosky

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This Thesis submitted by Sheldon Peter Waskosky in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

Stephen A. Marlett
(Chairperson)

Gilbert Mathews

J. Albert Bickford

This Thesis meets the standards for appearance and conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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Signature Shelley Peterson Woodbury

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ABSTRACT

This thesis is a description of the phonology of Salasaca Quichua (SQ), a member of the Quechua II or A language family. There are 26 phonemes which include three aspirated voiceless stops and three voiced stops.

Voiced stops have fricative allophones in intervocalic environments. There are two underspecified segments (/G/ and /N/) whose phonological realization depends on the environment which follows. The /G/ may be realized as [g], [ɡ], [k], or [x]. The /N/ may be realized as a bilabial, alveolar, alveopalatal, palatal or velar nasal.

The syllable structure of SQ has a maximal syllable template of [CCVC]. I analyze the syllable template and conditions based on Prosodic Phonology and Junko Ito's proposals of Prosodic Phonology's application.

Five postpositional segments, (/ža/, /mi/, /da/, /ga/ and /ču/, are posited for SQ based on the failure of these postpositions to cause the usual penultimate stress on words they follow. In addition, stress is used to show that /ma/ is a separate word.

LIST OF ABBREVIATIONS

ω	phonological word
ϕ	phonological phrase
σ	syllable
1	1st person
2	2nd person
3	3rd person
Acc	accusative
Aff	affirmative
ant	anterior
bck	back
Bec	become
Caus	causative
Com	comitative
cons	consonantal
cont	continuant
cor	coronal
Conj	conjunctive
Dat	dative
Hon	honorific
Inf	infinitive
Imp	imperative
Loc	locative
nas	nasal
Pl	plural
Poss	possessive
Pot	potential
Pres	present
Prob	probable
Prog	progressive
Pst	past
Purp	purpose
S	singular
son	sonorant
SQ	Salasaca Quichua
Src	source
str	stress
strid	strident
tns	tense
Top	topic marker
voi	voice
Wit	witness - 1st Person
YNQM	yes/no question marker

1. INTRODUCTION

Salasaca Quichua (SQ) is spoken in the province of Tungurahua in Ecuador, South America. It is a member of the Quechua language family. Quechua was the unifying language of the Inca Empire. The Incas sent out instructors to teach those who did not know the language (Prescott 1847). Today Quechua is spoken in Peru, Bolivia, Ecuador, Argentina, Colombia and Chile in both the highlands and lowlands, though the largest populations of Quechua speakers are in the highlands.

Quechua has been divided by Parker (1963) and Torero (1964) into two large groups. The languages spoken in central Peru are called Quechua I by Torero and Quechua B by Parker. Those spoken elsewhere are labeled Quechua II by Torero and Quechua A by Parker. Therefore, SQ is a part of Quechua II or Quechua A. The Ecuadorian Quechua languages are referred to as Quichua because they have a three-vowel system without the /e/ phoneme of Spanish.

According to the Salasacans' own oral history, they were transplanted from Bolivia to Ecuador by the Incas. This theory is generally believed, but there have been people who doubt its accuracy (Barriga López 1988:16-21). It is also said that the men wear black ponchos and the women wear black skirts because they are in mourning for Atahualpa, the last Inca ruler believed to be from Quito. The Spaniards demanded that the people of the Inca Empire

bring gold as a ransom for the Inca leader Atahualpa. However, Atahualpa was executed before all the gold arrived in Cajamarca, Peru. Some Salasacans proudly state that they did not ever bring their gold as demanded by the Spaniards because they heard of Atahualpa's death before they arrived.

Salasaca is located in the central part of Ecuador, in the province of Tungurahua. It is about fourteen kilometers east of Ambato, the provincial capital of Tungurahua. Salasaca is a "parroquia" (the smallest unit of government in Ecuador, equivalent to a township or parish). Geographically, Salasaca is broken into fourteen "manzanas" (neighborhood communities).

The exact population of the Salasaca people is unknown. The official national census of 1974 lists the population of Salasaca as 4,236. However, a census conducted by the nuns of the Madre Laura order who live in Salasaca and the Salasacan leaders gives the population as 4,804 (Carrasco A. 1982:111). Several Salasacans estimate there are 6,500 - 8,000 people today. The difficulty with obtaining an accurate census is that the Salasaca community has resisted cooperating with census takers. Also, the communities of Rosario and Pintag, where many Salasacans live, were not counted as Salasacans because non-Salasacans also live in those communities.

The social center for the Salasaca people is now the main plaza area of Salasaca (which will be referred to as downtown Salasaca) along the highway which runs from Ambato to the eastern Ecuadorian jungle. This is the location of the main Catholic Church, the Alliance Evangelical Church, the Artisan Cooperative, several tapestry shops, and the high school. However, the historical center was the community now known as Chilcapamba, which is still referred to by many of the older people as Salasaca. The switch between these two centers has been a gradual one that was probably brought about by the construction of the highway between Ambato and Baños in 1934. As evidence that the center has moved, on June 11, 1989, the Tardi Octava Festival was celebrated in downtown Salasaca, although it had been traditionally celebrated in Chilcapamba. The Salasacans themselves had predicted that half of the people (the "traditionalists") would be in Chilcapamba and the other half (the "modernists") in downtown Salasaca. However, nothing happened in Chilcapamba; everyone came to downtown Salasaca to celebrate.

The Salasacans traditionally have been subsistence agriculturalists. Their main crops are potatoes, corn, barley, wheat, peas, carrots, quinua, lentils, beans, cabbage and squash. Since 1945 they have also been

producing wool tapestries which have supplied a supplemental cash source (Carrasco A. 1982:17).

Until 1947, education in Salasaca was informal, i.e. children were taught by their parents as a part of their daily living. In that year the first literacy campaign was conducted in Salasaca by nuns of the Madre Laura order. Since that time the importance of formal education has grown. There are now six primary schools (in which there are two formal bilingual programs) and one secondary school (which is bilingual). Many children now go to elementary school, and Poeschel (1985:159) reported in 1985, 6.62 percent of the people have completed high school. There are a few Salasacans who have completed some advanced education. (Three of the five no longer live in the Salasaca community. Two live in Quito and one in the United States.)

Salasaca Quichua is an SOV language, although there is some flexibility in constituent order. It is an agglutinating language that has only suffixes. Nominals are marked for case (subjects are unmarked, direct objects are marked with /=da/ and indirect objects are marked with /-muN/).[1] Verbs agree in person and number with the subject; there is no verb agreement with the object. This is an aspect of SQ which differs from many other Quechuan languages (Muysken 1977:47). Several Ecuadorian dialects have an optional verbal suffix

(/-wa/) that indicates the first person singular object agreement (1977:48), SQ does not even have this suffix. Like other Quechuan languages, SQ has incorporated and is still incorporating a large number of Spanish words into its lexicon.

NOTES

[1]The symbol = will be used for those morphemes that are not an ordinary suffix. Quechuanists have referred to them as "independent suffixes" and "enclitics". In this thesis I use the term postpositions.

2. PHONEMES AND ALLOPHONES

This section contains the phonemic inventory of SQ (section 2.1), gives evidence for the phonemic contrasts (section 2.2) and discusses the allophonic rules (section 2.3).

2.1. PHONEMIC INVENTORY

The following chart shows the 26 phonemes of the SQ.

CONSONANTS

stops				
aspirated	pʰ	tʰ		kʰ
voiceless	p	t		k
voiced	b	d		g
fricative				x
affricates		ɟ	č	
sibilants				
voiceless		s	š	
voiced		z	ž	
nasals	m	n	ñ	
liquids				
lateral		l		
flap		r		
glides	w		y	

VOWELS

	front	mid	back
high	i		u
low		a	

There is a lack of contrast between certain phonemes in some positions in the syllable. Two important cases will be described. First, nasals do not contrast in syllable-final position; they are transcribed as N here. Second, non-strident obstruents do not contrast in syllable-final position; they are transcribed as /G/ here (since the phonetic realization is always velar). The phonetic realizations of /N/ and of /G/ are discussed in sections 2.2 and 2.3.

The phonemes of SQ differ from Imbabura Quichua, a Quechuan language spoken in the northern province of Imbabura, Ecuador, in the inclusion of aspirated stops and the exclusion of the labio-dental fricative (Cole 1985:8, Jake 1985:16). Cole mentions that several Imbabura consonants, including /b/, /d/ and /g/, are borrowed from Spanish. These three consonants are definitely part of SQ and do not occur just in loan words.

Unified Quichua (a language taught in schools and universities in Ecuador that serves, much as does High German in Germany, by providing one written, unified form of Quichua) has 26 letters in the alphabet (CIEI 1983). The most significant problem this orthography poses for SQ is in writing the aspirated stops which are not allocated separate graphemes in Unified Quichua.

2.2. EVIDENCE FOR CONTRAST

The following section shows the contrasts between suspicious pairs of sounds in SQ. The data are given in phonemic representation, with the symbols /N/ and /G/ representing underspecified nasals and non-strident obstruents, respectively (section 2.1).

For the consonant phoneme contrasts, the first two words from each set of suspicious pairs show contrasts in word initial position, the second two words in intervocalic, the third pair in postconsonantal, and the final pair in preconsonantal. All of the consonant contrasts may be found in initial and intervocalic positions. If less than eight words are given, contrast in preconsonantal or postconsonantal position or both has not been found.

Three factors restrict the number of examples of contrasts in the preconsonantal and postconsonantal positions. First, the CVC syllable types are less frequent than the CV type, so it is not as common to find two contiguous consonants. Secondly, certain consonants are not permitted as syllable codas, i.e. occurring as the final consonant in a CVC syllable (section 4.2). Finally, a few of the consonants, such as /ñ/, are infrequent in the overall inventory of sounds, so it is unlikely to find those consonants immediately preceding or following another consonant.

Stops

The aspirated /tʰ/ and /kʰ/ have a similar distribution; they are found only in syllable-initial position where they contrast with /t/ and /k/ respectively. The aspirated voiceless bilabial /pʰ/ does not occur preconsonantally (that is, in syllable-final position). However, it does contrast clearly with /p/ in syllable-initial position. The only stops that have a wide distribution preconsonantally are velars. Only voiceless obstruents occur following voiceless obstruents.

Throughout this thesis, verbs are cited in the infinitive form, which uses the nominalizing suffix /-na/.

Generally, phonemic transcriptions are used in this section. However, the velar stops and nasals do not contrast preconsonantally or word-finally. See section 2.3 for the explanations of the underspecified segments /G/ and /N/.

(1) p : b

puNgu	'door'
buNga	'bee'
upayana	'to be quiet'
ubiyana	'to drink'
urpi	'dove'
tarbuna	'to plant, sow'

(2) p^h : p	p^haɕaG	'fear, suspicion'
	paɕaG	'one hundred'
	t^hip^hu	'a medicinal plant'
	sipu	'wrinkle, crease'
	ašp^{h}a	'earth'
	ušpa	'ash'
(3) t : d	tažina	'to spill'
	dalina	'to paste'
	šitana	'to throw'
	kuNbidana	'to give'
	yaNta	'wood'
	taNda	'bread'
(4) t^h : t	t^hiNbuna	'to boil'
	tigrana	'to fall'
	p^{h}it^{h}ina	'to cut'
	šitana	'to throw'
(5) k : g	kuluG	'storage bench'
	guluN	'thunder'
	kwika	'intestinal parasite'
	taruga	'deer, stag'
	čilka	'green shrub'
	milga	'a lot, much'
(6) k^h : k	k^hačuN	'sister-in-law'
	kaču	'horn'
	pak^{h}ina	'to break'
	maki	'hand'

Fricatives & Affricates

(7) x : k	xaytana	'to kick'
	kaynana	'to delay'
	uxu	'cold, cough'
	uku	'inside'
	sawxana	'to untie'
	ɸaNkana	'to grind by hand'

The contrast between the phonemes /x/ and /k/ postconsonantally is not very strong, but is somewhat supported by the presence of /k/ following /w/ in /wawki/ 'brother (of a male)' to be compared with /sawxana/ 'to untie'.

(8) ɸ : č	ɸala	'thin'
	čaki	'foot'
	paɸaG	'one hundred'
	pača	'earth'
	waGɸuG	'(brownish gray bird)'
	waGča	'poor'
(9) s : z	suni	'long'
	zuti	'wet'
	wasi	'house'
	taziN	'nest'
	luNsa	'fringe'
	paNzaN	'shelf, ledge'

(10) s : š	siNga	'nose'
	šiNga	'drunk'
	tisana	'to card wool'
	mišana	'to work competitively'
	riGsina	'to know, be acquainted'
	žuGšina	'to leave'
	iskuN	'nine'
	iški	'two'
(11) š : ž	šuti	'name'
	žužu	'tender'
	piši	'urine'
	biži	'calf'
	uGša	'grass,straw'
	tuGža	'slipknot'
	ušpa	'ashes'
	tužpa	'cooking stone'
(12) z : ž	zutu	'wet'
	žuru	'pit'
	izi	'curl'
	biži	'calf'
	yuGzi	'sandy'
	čuGžu	'corn'

Nasals

The phoneme /b/ never appears preconsonantally so there is no preconsonantal contrast between phonemes /b/ and /m/. The phoneme /w/ never appears postconsonantally except when the suffix /-wuN/ is added to a consonant-final morpheme, so no postconsonantal contrast involving it and other consonants is shown.

(13) b : m	b̲iži	'calf, veal'
	m̲iži	'demon'
	si̲bana	'to get fat'
	ki̲mina	'to be brought close'
	čaNži̲lba	'a type of plant (that makes a rustling sound when moved)'
	xal̲ma	'harness'
(14) b : w	b̲iži	'calf, veal'
	w̲ata	'year'
	si̲bana	'to get fat'
	kʰi̲wana	'to cut grass'
(15) w : m	w̲awa	'newborn animal'
	m̲apa	'dirty'
	ña̲wi	'eye, face'
	sa̲mi	'bubble'
	ča̲wbi	'half'
	ču̲Nbi	'belt'

(16)	m : n	mižma	'wool'
		nima	'nothing'
		rumi	'rock'
		suni	'long'
		kušma	'sleeveless shirt'
		kušni	'smoke'
(17)	n : ñ	na	'no'
		ña	'already'
		nina	'to say'
		phiña	'angry'

Muysken (1977:1 ...es Parker's claim that voicing after nasals is ge... in all Ecuadorian Quechua dialects.[1] The following SQ data confirm Muysken's position.

(18)	čaNta	'wig (worn by dancers at festivals)'
	yaNta	'firewood'
	kuluNkina	'to make a crashing sound, to thunder'
	waliNkina	'to oscillate'
	uluNkina	'to make a fist'
	xiNči	'hard, difficult'
	kiNsa	'three'

Liquids

The liquids, voiced lateral and retroflexed flap, contrast in all positions. The example shown for postconsonantal contrast is not as strong as the other contrasts in that the stress is not located in the same place relative to the contrast. No example was found in the corpus of data contrasting /l/ and /r/ postconsonantally with similar stress patterns.

(19) l : r

	larka	'irrigation ditch'
	rasu	'snow'
	ɸala	'thin'
	sara	'corn'
	pačaNlika	'Benitez (a town)'
	kiNri	'through, by means of'
	xalmana	'to saddle'
	armana	'to bathe'

Vowels

For the vowel phoneme contrasts, the following order is used:

Pair of words	Position of vowel	Stress
first	word initial	stressed
second	word initial	unstressed
third	interconsonantal	stressed
fourth	interconsonantal	unstressed
fifth	word final	stressed
sixth	word final	unstressed

The three vowels all contrast with each other in all positions.

(20) a : i

aśpʰa	'earth'
iški	'two'
awana	'to weave'
ižana	'to advise, tell'
kaNča	'toasted'
kiNsa	'three'
raNdina	'to buy'
tiNgina	'to unite'
ña	'already'
pi	'who'
čiNba	'on the other side'
čuNbi	'belt'

(21) a : u	ašpʰa	'earth'
	ušpa	'dust'
	armana	'to wash, bathe'
	urmana	'to fall'
	pʰaNga	'leaf'
	pʰuNža	'day'
	ćaNkana	'to grind by hand'
	ćuNgana	'to suck, absorb'
	na	'no'
	šuG	'one'
	wayka	'among many'
	wayku	'valley'
(22) i : u	iNdi	'sun'
	uNgi	'sickness'
	iñana	'to grow'
	umana	'to memorize'
	kički	'stretched'
	kučki	'money'
	riNriN	'ear'
	iskuN	'nine'
	či	'that'
	šuG	'one'
	žaki	'sad'
	yaku	'water'

2.3. ALLOPHONIC RULES

In this section the major allophonic rules of SQ are presented.

Intervocalic Spirantization

The voiced stops (/b/, /d/, and /g/) become voiced fricatives ([b̶], [d̶], and [g̶]) intervocalically. Voiceless stops do not.

(23) /rumibabus/ --> [rumi'bab̶us] 'dark-brown moss'
/waNgudu/ --> [waŋ'gud̶u] 'man's long braid'
/taruga/ --> [ta'rug̶a] 'deer, stag'
/wasi-bi/ --> [wa'sib̶i] 'house-Loc'
/tayta-guna/ --> [tayta'g̶una] 'father-Pl'

The voiced stops seldom occur preconsonantally. The bilabial and alveolar voiced stops only appear before other consonants in loan words from other Quichua dialects and from Spanish. The velar is the one voiced stop that occurs in native SQ words preconsonantally, and then only before /ž/, /y/, /r/, /m/, and /n/. Before /ž/ and /y/ it becomes a fricative.

(24) /čaGžana/ --> [čag'žana] 'to tie'

/pʰuGyu/ --> ['pʰugyu] 'water spring'

/čaGra/ --> ['čagra] 'field'

/žaGma/ --> ['žagma] 'lie'

/ɸuGni/ --> ['ɸugni] 'pus from an eye'

/waNbra/ --> ['wambra] 'young man'

(loan word from another Quichua dialect)

/swidru/ --> ['swidru] 'father-in-law'

(loan word from Spanish)

These data show that the stops as a general class do not spirantize preconsonantally. (Rule (44), Manner Assimilation, accounts for the spirantization of /G/ before /ž/ and /y/.) Therefore, the rule accounting for the spirantization in example (23) can be given as in (25):

(25) Intervocalic Spirantization

$$\begin{bmatrix} C \\ -son \\ +voi \end{bmatrix} \rightarrow [+cont] \; / \; V\_\_\_\_V$$

The domain of Intervocalic Spirantization extends beyond the word. The following examples show spirantization applying with part of the environment in the preceding word.

(26) /ñuka=da/[2] --> [ñu'kaɖa] '1S Acc'

/ñuka=ga/ --> [ñu'kaga] '1S Top'

/kuši ga-N/ --> ['kuši 'gaŋ] 'S/he is happy.'

/iški bunga/ --> ['iški 'ɓuŋga] 'two bees'

Nasal Assimilation

A nasal assimilates to the point of articulation of the immediately following consonant if the following consonant is in the same word and is not a nasal.

(27) /xuNbi/ --> ['xumbi] 'sweat'

/xuNda/ --> ['xunda] 'full'

/yaNta/ --> ['yanta] 'firewood'

/uNgi/ --> ['uŋgi] 'sick'

/ištuNku/ --> [iš'tuŋku] 'bar'

/pʰuNža/ --> ['pʰunza] 'day'

/kiNri/ --> ['kinri] 'through, almost'

/laNča/ --> ['lanča] 'drizzle'

/kiNsa/ --> ['kinsa] 'three'

/kaN-buG/ --> ['kambux] '2S-Poss'

/kaN-wuN/ --> ['kaŋwuŋ] '2S-Com'

/iži-N=mi/ --> [i'žiŋmi} 'not.exist-3Pres Aff'

/kaN-muN/ --> ['kaŋmuŋ] '2S-Goal'

The last three examples require further discussion and investigation. /iži**N**=mi/ will be discussed more in the following subsection on Velarization and in section 5 on stress where I conclude that /=mi/ is a special postpositional segment. /kaN-muN/ leads me to posit the

[-nas] constraint in the environment in the following rule. Nasals do not provide the appropriate environment for Nasal Assimilation.[3]

(28) Nasal Assimilation

$$\begin{matrix} C \\ [+nas] \end{matrix} \quad \text{---} > \quad [\alpha place] \; / \; \underline{\quad\quad} \quad \begin{matrix} C \\ [\alpha place] \\ [-nas\ ] \end{matrix}$$

Velarization

Elsewhere, when a nasal is not followed immediately by a consonant, it is always velar, as the examples in (29) demonstrate. The underspecified nasal is only found in syllable-final position.

(29) /utuN/ --> ['utuŋ] 'without fingers'

/kaN/ --> ['kaŋ] 'you'

/ñuka-N/ --> ['ñukaŋ] 'I-Com'

/ri-N/ --> ['riŋ] 'go-3Pres'

The following examples show that the Nasal Assimilation does not occur across word boundaries, and Velarization occurs instead.

(30) /xatuN mara/ --> ['xatuŋ 'mara] 'big child'

/xatuN taNda/ --> ['xatuŋ 'tanda] 'big bread roll'

/xatuN wayra/ --> ['xatuŋ 'wayra] 'big wind'

/xatuN yaNta/ --> ['xatuŋ 'yanta] 'big piece of wood'

/xatuN larka/ --> ['xatuŋ 'larka] 'big water ditch'

/xatuN čaGra/ --> ['xatuŋ 'čagra] 'big field'

/xatuN sača/ --> ['xatuŋ ˈsača] 'big forest'

/xatuN kaču/ --> ['xatuŋ 'kaču] 'big horn'

/xatuN guluN/ --> ['xatuŋ 'guluŋ] 'big thunder'

/kaN ri-Ngi/ --> ['kaŋ 'ʐi-ŋgi] 'you go-2SPres'

/ñuka-N šam-i/ --> ['ñukaŋ 'šami] 'I-Com come-Imp'

(31) Velarization

$$N \longrightarrow \begin{bmatrix} -ant \\ -cor \\ +high \end{bmatrix} / \_\_\_\_\_]_{\sigma}$$

There is one exception to the Velarization rule. In example (32) the velar nasal is found word medially.

(32) /riNriN/ --> ['ʐiŋʐiŋ] 'ear'

The phonetic transcriptions of /kiNri/ in (27) and /riNriN/ in (32) show that Nasal Assimilation applies in /kiNri/ and Velarization in /riNriN/. Therefore, I propose that /riNriN/ is an exception to Nasal Assimilation, perhaps because it is a case of reduplication. Otherwise, the juxtaposition of the [ŋ] and the [ʐ] would be unusual. The next section on R-Spirantization discusses this word further.

R-Spirantization

As in Imbabura Quichua (Cole 1985:202), the flap in SQ becomes a voiced retroflex grooved fricative [ʐ] word initially.

(33) /raNdina/ --> [ʐan'dina] 'to buy'

/rikuna/ --> [ʐi'kuna] 'to look'

The following data show the necessary environment is word-initial position rather than word-internal position.

(34) /taruga/ --> [ta'ruga] 'deer, stag'

/mara/ --> ['mara] 'child'

/kʰawra/ --> ['kʰawra] 'bright yellow'

/wayra/ --> ['wayra] 'wind'

/riGra/ --> ['ʐigra] 'arm'

/čuGri/ --> ['čugri] 'hurt, wound'

(35) R-Spirantization[4]

r ---> ʐ / ω[_____

The examples in (36) are two exceptions to this rule.

(36) /riNriN/ --> ['ʐiŋʐiŋ] 'ear'

/rurana/ --> [ʐu'ʐana] 'to do, make'

Here the second /r/ is not word initial and yet spirantizes. These are the only two cases of spirantization word medially to the best of my knowledge. The fact that the two syllables of /riNriN/ are identical suggests that reduplication may be involved. However, /rurana/ does not have reduplicated syllables, which might suggest that there is a harmonization rule applying.[5] The word /riGra/ from example (34) in which the second /r/ does not spirantize, shows that perhaps only syllable-initial /r/ harmonizes.

Vowel Laxing

High vowels may become lax in an unstressed environment. Something similar is noted in Imbabura Quichua (Cole 1985:207, citing Chuquin 1980). Although observations about SQ lack systematic study, one can observe that vowel laxing happens in casual, fast speech. Further research needs to be done to identify the exact environment; however it is certain that it occurs only in unstressed syllables. Vowel Laxing does not occur in word final position as shown in [wa'siɒi] but may occur in the final syllable of the word as in ['muyuŋ].

(37) [mu'yuška] 'they surrounded'
['muyuŋ] 'they surround'
[wa'siɒi] 'in the house'
['pʰitʰɪŋ] 'they cut'

(38) Vowel Laxing (Optional)

$$\underset{[+high]}{V} \quad \text{---} > \quad [-tns] \quad / \quad \underline{\quad} \; \underset{[-str]}{C}$$

The Underspecified Velar Consonant

Since there is no contrast among the velar stops and fricatives in syllable final position, an underspecified velar consonant (G) has been posited in this position, as in /šuG/ 'one' and /čušaG/ 'barn owl'. Three rules specify the phonetic realization of G.

Final Devoicing

At the end of a phonological phrase, /G/ appears as a voiceless velar fricative.

(39) /kuluG/ --> ['kulux] 'storage bench'

/čušaG/ --> ['čušax] 'barn owl'

The following examples show that the environment is not simply word final position.

(40) /šuG mara/ --> ['šug 'mara] 'one child'

/šuG runa/ --> ['šug 'runa] 'one man'

The rule describing this process is shown in (41).

(41) Final Devoicing[6]

$$\begin{bmatrix} C \\ -son \\ -ant \\ -cor \end{bmatrix} \longrightarrow [-voi] \;/\; \underline{\quad\quad} \;]_{\Phi} \quad [+cont]$$

Manner Assimilation

Elsewhere, /G/ assimilates in continuancy and voicing with the immediately following consonant or vowel.

(42) /xaGča/ --> ['xakča] 'hair'

/čuGžu/ --> ['čugžu] 'corn'

/saGsu/ --> ['saxsu] 'unrefined wool'

/rupaGyačina/ --> [rupagya'čina]
'to cause to become hot'

/čaGra/ --> ['čagra] 'field'

The following examples show that this assimilation applies across word boundaries. They also show the Manner Assimilation rule applying before several additional segments that do not follow /G/ inside of the word.

(43)

/šuG mara/	-->	['šug 'mara]	'one child'
/šuG runa/	-->	['šug 'runa]	'one man'
/šuG xalma/	-->	['šux 'xalma]	'one harness'
/šuG suču/	-->	['šux 'suču]	'a paralytic'
/šuG čaGra/	-->	['šuk 'čagra]	'one field'
/šuG wawki/	-->	['šuɣ 'wawki]	'one brother'
/šuG laNča/	-->	['šug 'lanča]	'a drizzle'
/šuG ču/	-->	['šukču]	'one YNQM (one?)'
/šuG ža/	-->	['šuɣža]	'one Just (just one)'
/ñuka-G awilu/	-->	['ñukaɣ a'wilu]	'my grandfather'
/ñuka-G amigu/	-->	['ñukaɣ a'miɣu]	'my friend'

The Manner Assimilation Rule in (44) shows the underspecified velar /G/ assimilating in voicing and continuancy to the following segment.

(44) Manner Assimilation

$$\begin{bmatrix} C \\ -son \\ -ant \\ -cor \end{bmatrix} \longrightarrow [\alpha cont]\ [\beta voi] \quad / \quad \_\_\_\_\_ \quad [\alpha cont]\ [\beta voi]$$

Word Final Velar Deletion

A velar is optionally (but very commonly) dropped in word final position.[7]

(45)

/ri-NčiG/	--> ['rinči]	'go-1PlPres'
/ñukučiG=mi/	--> [ñuku'či=mi]	'1Pl Aff'
/ñukučiG ri-NčiG/	--> ['ñukuči 'rinči]	'we go'
/šuG/	--> ['šu]	'one'
/paɕaG/	--> ['paɕa]	'one hundred'

(46) Word Final Velar Deletion (Optional)

$$\begin{bmatrix} C \\ -son \\ -ant \\ -cor \end{bmatrix} \longrightarrow \emptyset \; / \; \_\_\_\_\_ \;]_{\omega}$$

NOTES

[1]Muysken cites Parker but the reference is not clear.

[2]See section 5 where from stress patterns there will be evidence that /=da/, /=ga/, /=ža/, /=mi/, /=ču/ and /=ma/ are not suffixes.

[3]However, more study must follow because I believe that in faster speech the nasal before /m/ in /kaN-muN/ does assimilate; therefore an additional fast-speech rule is needed.

[4]ω is used in this thesis to mean phonological word (as in Nespor and Vogel 1986:xiii-viv).

[5]This possibility was suggested to me by Dr. Stephen Levinsohn (personal communication), as he proposes such a rule for Inga.

[6]Φ is used in this thesis to mean phonological phrase (as in Nespor and Vogel 1986:xiii-viv).

[7]Also, there is a case of a single morpheme (/-muN/) that optionally drops a nasal (/-mu/) in word final position. I do not know of other morphemes that have this alternation and there are other morphemes that do not have the alternation, e.g. /-wuN/.

3. MORPHOPHONEMIC RULES

In this section some morphophonemic rules in SQ will be examined.

Vowel Harmony

Vowel harmony exists as an optional rule in SQ for what appears to be a limited number of words. The clearest example is with the inflections of /ižana/ (a negative existential verb). The second syllable of the root can have any of the three vowels depending on the morpheme that follows it.

(47)
i'ža-na
be-Inf
'to not exist'

i'ži-N=mi
be-3Pres=Aff
'No, there's not.'

i'žu-N=ču
be-3Pres=YNQM
'There isn't, is there?'

The verb /karana/ also illustrates Vowel Harmony.

(48)
ka'ra-na
feed-Inf
'to feed'

ka'ru-NguG
feed-Purp
'in order to feed'

ka'ra-ba-y
feed-Hon-Imp
'please feed'

The following rule is given tentatively since systematic study of Vowel Harmony has not been carried

out yet. When people are speaking carefully as they tend to on a tape, they do not use Vowel Harmony. Vowel Harmony has only occasionally been recorded. The words which optionally undergo Vowel Harmony should be indicated in the lexicon.

(49) Vowel Harmony (Optional and Lexically-restricted)

$$V \longrightarrow \begin{matrix}[\alpha\ \text{back}] \\ [\beta\ \text{high}]\end{matrix} \ / \ \_\_\_\_\_\ C\ (C)\ \begin{matrix}V \\ [\alpha\ \text{back}] \\ [\beta\ \text{high}]\end{matrix}$$

Glide Deletion

The comitative suffix has three allomorphs: /-wuN/, /-N/, and /-uN/. When a root ends with a vowel, either /-wuN/ or /-N/ may be used, but the preference is for the latter. When a root ends with /y/, the glide of the comitative suffix deletes.

(50) kaN-wuN ---> ['kaŋwuŋ]
2-Com
'with you'

ñuka-wuN ---> [ñu'kawuŋ]
1-Com
'with me'

ñuka-N ---> ['ñukaŋ]
1-Com
'with me'

pay-wuN ---> ['payuŋ]
3-Com
'with him/her'

(51) Glide Deletion

$$\begin{matrix}C \\ [-\text{cons}]\end{matrix} \longrightarrow \emptyset \ / \ \begin{matrix}C \\ [-\text{cons}]\end{matrix} \ \_\_\_\_\_$$

Vowel Deletion

The following data show that vowel final verb roots lose their final vowel in certain environments. Notice especially the singular and plural imperative in the middle two columns. The final column, however, shows that with the honorific suffix, the root final vowel is retained.[1]

(52)

Infinitive	Singular Imperative	Plural Imperative	Honorific Sg. Imperative
uya-na 'to hear'	uy-i	uy-i-či	uya-ba-y
šamu-na 'to come'	šam-i	šam-i-či	šamu-ba-y
raNdi-na 'to buy'	raNd-i	raNd-i-či	raNdi-ba-y

The problem is how to derive /uyi/ from underlying {uya-i} and /uyabay/ from underlying {uya-ba-i}. The following rule is proposed:

(53) Vowel Deletion

$$V \longrightarrow \emptyset \;/\; \_\_\_\_\_]_{root}\ V$$

NOTES

[1]There are two imperative allomorphs which are syllabic and non-syllabic, /i/ and /y/ respectively. The two allomorphs occur because SQ does not permit vowel clusters as discussed further in section 4.2. When the imperative suffix is directly preceded by a vowel (as found in the honorific suffix), the allomorph /y/ appears.

4. SYLLABLE STRUCTURE

4.1. INTRODUCTION TO PROSODIC PHONOLOGY

Linguists have differed in the way they look at the syllable. Although generative phonologists at one time rejected the notion of the syllable, now they are recognizing its critical importance.

Traditionally in generative phonology syllable structure has been approached from a linear perspective (Kotynski 1988). But Pike and Pike (1947) proposed a multi- dimensional approach to the syllable. Also, Kiparsky (1983) and Ito (1986), among others, propose a multi-dimensional method of analyzing syllable structure as a part of a theory of prosodic phonology; they present the syllable as a prosodic unit. In order to discuss syllable structure, syllable theory in prosodic phonology will be followed and a template for SQ will be proposed.

According to Ito, prosodic phonology has three basic principles: prosodic licensing, locality, and directionality. These principles of prosodic phonology facilitate the analysis of syllables; they are "operative principles which guide syllabification" (Ito 1986:2).

The first principle, prosodic licensing, claims that "all phonological units must be prosodically licensed, i.e., belong to higher prosodic structure" (ibid). If there appear to be exceptions to this licensing process,

the theory of extraprosodicity comes into play. Extraprosodicity permits edges of well-defined domains to be special. Ito presents arguments in favor of the universality of edge segments being extraprosodic in all lexical cycles with a language-particular basis of extraprosodicity at the word level.

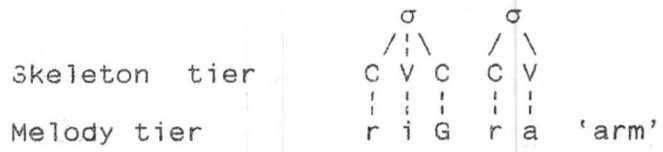
Locality means that "well-formedness of a prosodic structure is defined locally," (ibid) within a syllable or metrical foot. That is, it is "not dependent on information outside of that structure" (1986:7). The principle of Locality requires the well-formedness of a syllable to be internally defined and determined. This means that other extra-syllable influences are not allowed to determine the well-formedness of a syllable.

Finally, directionality states that all phonological mapping must be done in a single direction (from left to right, or from right to left). The principle of directionality helps to map consonants that might go with either of two syllables. If a language is right-to-left in its directionality, it will maximize the onset. If it is left-to-right, it will maximize the coda.

A syllable template is a language-specific well-formedness condition, which defines the possible skeletal sequences of a language. In the following diagram the template is represented by the skeletal tier

and the phonological string is represented by the melody tier.

(54)



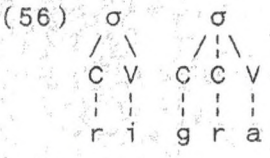
A template is determined by language-specific facts. For instance, if a language has some words with an onset of CCV and other words with a rime of VCC, the maximal syllable template is [CCVCC], unless extraprosodicity is involved.

A template, in turn, determines the syllabification of a word. If SQ has a maximal syllable template of [CVC], the word /rigra/ 'arm' would be expected to be syllabified as follows:

(55)

However, if SQ has a [CCV] template the word /rigra/ would be syllabified in this way:

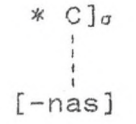
(56)



Other language-specific conditions like coda conditions put limitations on the class of segments which are allowed to be licensed to a specific template

position. For example, the following coda condition would disallow syllable-final non-nasal consonants:

(57)



There are certain proposed universal well-formedness conditions that apply to syllable structure. A basic universal condition is the Universal Core Syllable Condition. It claims that the sequence CV must be universally designated as tautosyllabic.

One of the most important processes in Ito's Syllable Theory is syllabification, the mapping of a phonological string to the language-specific syllable template. It is done continuously at the lexical level and is "governed by syllable well-formedness conditions and a directional parameter" (Ito 1986:2). Even though the template is language specific, syllabification (or syllable mapping) uses a universal association mechanism.

Ito proposes a Continuous Syllabification Hypothesis which states that "syllabification is always potentially applicable" (1986:49). This implies a phonological cycle, an important tenet in Ito's theory. The output of every phase of the cycle must be prosodically licensed, i.e. each segment in the syllable must be mapped onto a higher level with all segments accounted for. Then, Stray Erasure, which erases those segments which are unlicensed, must be applied. This theory, therefore,

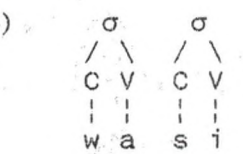
stipulates that stray segments (except extraprosodically licensed edge segments) are eliminated on every stage of output within the phonological cycle.

In summary, a template is a description of what is prosodically licensed. Its application is local and its mapping must have direction. It is proposed with conditions, and its structure must be preserved. Ito's Syllable Theory is a "theory in which language-specific conditions on syllabification are stated in the grammar in terms of conditions on representation" (1986:162). Then during the lexical phonology, structure preservation prevents ill-formed syllables, and Stray Erasure deletes all unlicensed material.

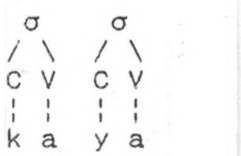
4.2. SYLLABLE TEMPLATE AND CONDITIONS

SQ has the maximal syllable template [CCVC]. However, the most common syllable type in SQ statistically is CV, as illustrated by the following examples:

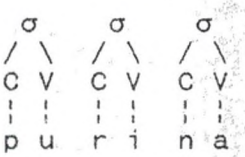
(58)



'house'



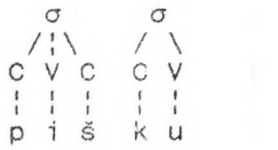
'tomorrow'



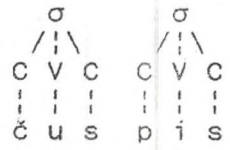
'to go about'

The following examples illustrate CVC syllables:

(59)

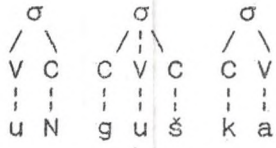


'bird'



'spark'

'bar'

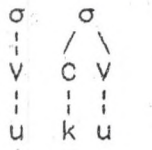


'sick'

A syllable may lack an onset in SQ, but only in word-initial position. Therefore syllables of the shape V and VC occur only at the beginning of words.

(60)

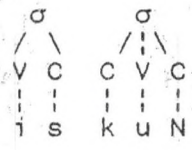
'what'



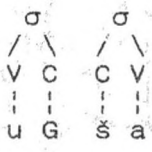
'inside'

'whirlwind, hurricane'

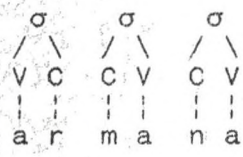
'dog'



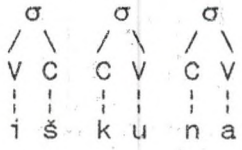
'nine'



'straw'



'to bathe'



'to shell corn'

ONSETS

All consonants can occur in the onset of a syllable.

In native words there are no clear cases of consonant clusters word initially. For native words, a constraint such as (61) may be posited.

(61) * ω[CC

Clear cases of exceptions to (61) are found in Spanish loan words. The only acceptable loan words with tautosyllabic consonant clusters are derived from Spanish words containing the clusters [gr], [br], and [fr]; words derived from Spanish words containing [pl], [fl], or [kl], have a single consonant in SQ.

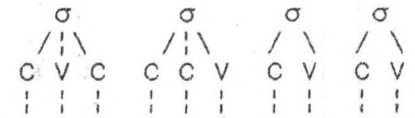
	SQ	Spanish	English
(62)	['granu]	['grano]	'grain'
	['bruxu]	['bruxo]	'shaman'
	['pʰruta]	['fruta]	'fruit'
	['lasa]	['plasa]	'plaza'
	['lawta]	['flawta]	'flute'
	['laru]	['klaro]	'clear'

SQ does have the phonemes /č/ and /ȼ/. These could be considered consonant clusters [tš] and [ts]. But because there are no other native words with word initial consonant clusters, these are interpreted as single segments.

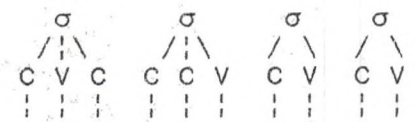
Native SQ vocabulary has two-consonant onsets in seven words. In four of these seven words, the

two-consonant onsets are found word medially. These examples, together with the loan words, motivate the existence of a complex onset, and hence the [CCVC] template. Example (63) shows two words that have /r/ as the second segment of the consonant cluster.[1]

(63)



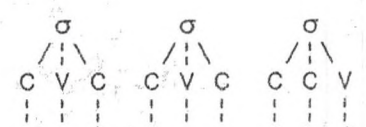
'to become curved or bent'



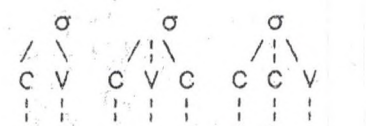
'to quiver with a fever'

Example (64) shows two words that have /šk/ as an onset cluster.

(64)



'For God's sake! (interjection)'



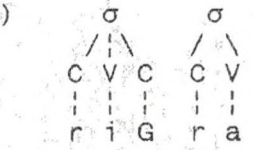
'disheveled'

Three words in SQ begin with [tʰy]. This sequence contrasts word initially with [tʰ] in such words as [tʰyuŋgu] 'hat' and [tʰuŋga] 'a type of reed (used to

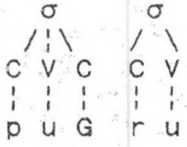
make wind instruments)'. The other two of the three words are: [tʰyuka] 'saliva' and [tʰyukur] 'a small bird'. There are two possible hypotheses to account for these words. [tʰy] could be a separate phoneme or [tʰy] could be a consonant cluster. I know of no strong evidence favoring either hypothesis, but assume that it is another onset cluster.[2]

An analysis of SQ consonant clusters is not complete without considering words with a /gr/ cluster. Such words are parsable in two ways with the [CCVC] template, as shown in (65a) and (65b).

(65a)

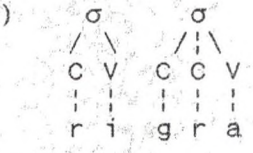


'arm'

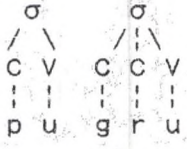


'hole'

(65b)



'arm'



'hole'

When Salasacans pronounce these words slowly, the vowel is lengthened and the velar consonant is shortened, implying that the syllabification is /ri.gra/, not /riG.ra/; /pu.gru/, not /puG.ru/, etc. If (65b) is the correct syllabification, this is evidence that syllabification in SQ proceeds right to left.

ONSET CONDITION

The only two-consonant onsets are /Cr/, /šk/ and perhaps /tʰy/.

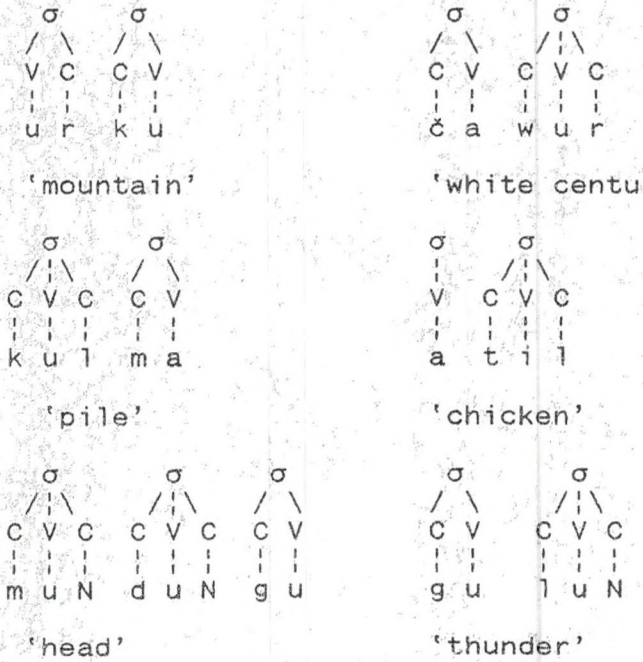
CODA CONDITION

Only the sonorants, stridents and the underspecified segment /G/ are allowed in the coda of a syllable. Thus, the coda condition is:

(66) * C]σ
[-son]
[-strid]
[-back]

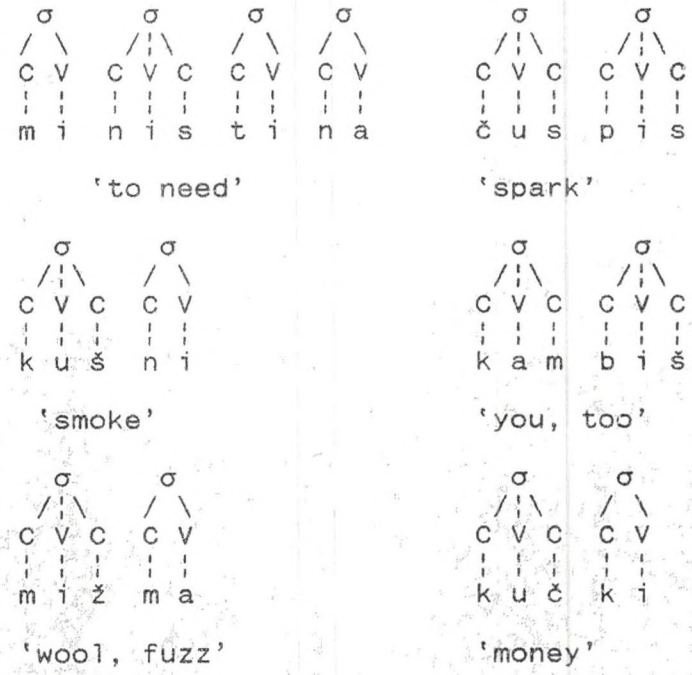
The above coda condition allows for the liquids, /r/ and /l/, and the underspecified /N/ to be codas. This is shown in (67).

(67)



The coda condition also allows for the stridents to be syllable final.

(68)



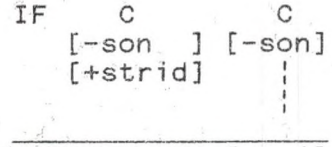
The words /ministina/ and /kučki/, illustrated above, show that when an obstruent is followed by an obstruent, the second obstruent must be voiceless. This is true not just of these two examples but of all similar cases:

(69)

čuspis	'spark'	išpana	'to urinate'
žustina	'to peel'	ištunku	'bar'
iskun	'nine'	unguška	'sick'
mižpuna	'to swallow'	ačpa	'dirt'

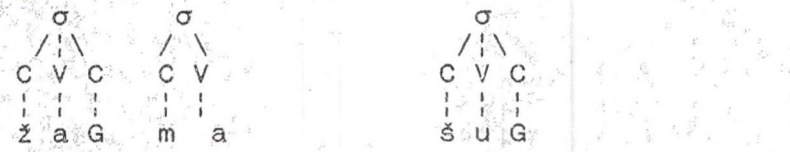
This leads to the following constraint:

(70)



The Coda Condition (66), also allows the underspecified segment /G/ to be a coda, as shown in (71).

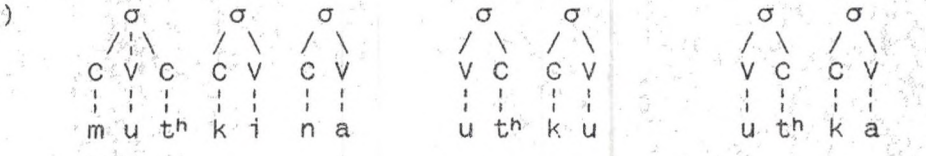
(71)



'lie' 'one'

The strident /¢/ does not phonetically occur syllable finally in (68). Interestingly enough, the voiceless alveolar aspirated stop does occur syllable finally, even though no other stops do. Therefore, I conclude that the consonant clusters in the following examples are the phonetic realizations of the /¢k/.

(72)



'fumigate' 'hole' 'fast'

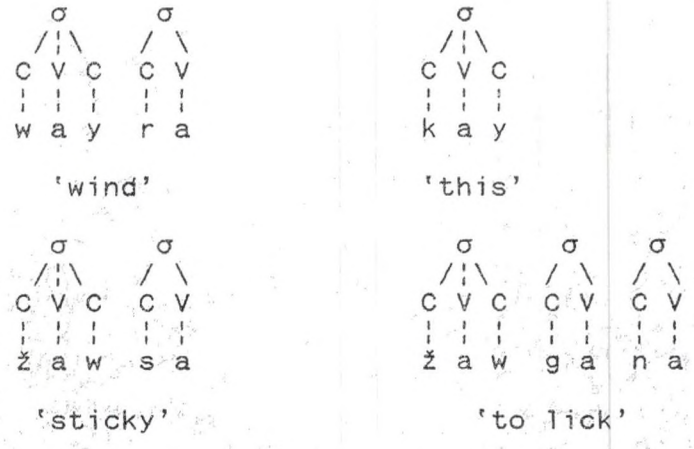
The semivowels /y/ and /w/ are analyzed as instances of /i/ and /u/ when associated with a C position (Clements and Keyser 1983).

(73) ['wayra] 'wind' ['kay] 'this'

['žawsa] 'sticky' [žaw'gana] 'to lick'

In these words the semivowel is syllabified as a coda.

(74)



The stress of the above words supports that the glides are non-syllabic segments. If they were syllabic segments, they would have one more syllable per word, which would mean that the above words would have three syllables and their stress should be on the debated segment (see section 5.1). However, the following are unattested:

(75) *wa'ira 'wind'

*ža'usa 'sticky'

These would also be counterexamples to my claim that onsetless syllables do not occur word-medially.

Therefore I conclude that the analysis in (74) is correct.

SQ does not allow voiced obstruents, voiced stridents or affricates in word final position. So while /č/, /ǵ/ and /ž/ occur in word-medial syllable codas, they are not found word finally.

(76) IF C]ω
[+strid]

THEN [+cont]
[-voi]

Examples with /s/ and /š/ in word-final position are given in (68).

NOTES

[1]In Imbabura Quichua, for the word /wambra/, Cole has proposed that "the phonological sequence /mr/ is realized phonetically as [mbr]" (206). A similar analysis for /kiNgriyana/ and /ziNbrarina/ in SQ is inadequate because of the Nasal Assimilation rule (28) in section 2.3. In order for /g/ and /b/ to be transitional segments the underlining form of the above words would be [kiNriyana] and [ziNrarina]. After applying Rule (28), the nasals would be alveolar and there would be no motivation for the transitional segments of velar and bilabial stops. Further, Nasal Assimilation does occur with the SQ word /kiNri/ ---> [kinri] 'almost, through', showing that there is no rule that epenthesizes a transitional consonant.

[2]Another possible hypothesis suggested by Dr. G. Hubert Matthews is to consider [tʰy] a phonetic realization of /ȼ/. This requires more investigation.

5. STRESS

5.1. STRESS RULE

As shown in the data given in this thesis thus far, stress in SQ is most commonly penultimate. In this section stress will be examined, since there are some occasions when the penultimate syllable stress pattern is apparently broken.

First a few examples of monomorphemic words in which the stress occurs penultimately are presented.

(77) /'uxu/ 'cough'
/'mara/ 'child'
/'xatuN/ 'big'
/'ȼaGni/ 'pus'

The above two syllable words all receive penultimate stress whether their first syllable is V, CV, or CVC. This is true of monomorphemic three and four syllable words also, although my corpus contains few examples.

(78) /sa'mura/ 'cow's milk after giving birth'
/ku'kaya/ 'cold lunch'
/ču'kuri/ 'weasel'
/wa'raNga/ 'thousand'
/sala'maNga/ 'someone who kills another using a witch doctor'

The stress of inflected verbs is always penultimate.

(79) /'ri-ni/
go-1Pres
'I go'

/ri-N'gi-čiG/[1]
go-2-Pl
'you (pl) go'

/ri-gu-'ga-ni/
go-Prog-Pst-1
'I was going'

/ri-gu-ga-N'gi-čiG/
go-Prog-Pst-2-Pl
'you (pl) were going'

/ri-Ngi-mu-'čari/
go-2-Pot-Prob
'you would go'

/ri-Ngi-čiG-mu-'čari/
go-2-Pl-Pot-Prob
'you (pl) would go'

/yača-či-Ngi-čiG-mu-'čari/
know-Caus-2-Pl-Pot-Prob
'you (pl) would teach'

/suni-ya-či-Ngi-čiG-mu-'čari/
long-Bec-Caus-2-Pl-Pot-Prob
'you (pl) would lengthen'

/mitiku-či-Ngi-čiG-mu-'čari/
hide-Caus-2-Pl-Pot-Prob
'you (pl) would hide'

Inflected nouns exhibit the same stress pattern as above.

(80) /ñu'ka-muN/
1S-Dat
'to me'

/wasi-'guna/
house-Pl
'houses'

/xaNbato-'muNda/
Ambato-Src
'from Ambato'

/kaya-'gama/
tomorrow-Until
'See you tomorrow.'

/'rasu-N/
snow-Com
'with snow'

5.2. PROBLEMATIC MORPHEMES

Some morphemes such as /=ga/ (Topic Marker) that occur postpositionally occur in two different patterns: one where penultimate stress is assigned as if /=ga/ were not part of the word, and another where stress is assigned as if /=ga/ were part of the word.[2] Other SQ morphemes which regularly participate in these two patterns are: /=ža/ (Just), /=da/ (Accusative) and /=mi/ (Affirmative).[3]

(81) ['wataža] [wa'taža] (year Just)
'just a year'

['tukida] [tu'kida] (everyone Acc)
'to everyone'

['ñukaga] [ñu'kaga] (1S Top)
'I'

['žakimi] [ža'kimi] (sad Aff)
'sad'

When two of these morphemes are together in sequence, the following patterns emerge.

(82) [kiža'ɖami] ['kižaɖami] (month Time Aff)

'a month'

The stress patterns of the examples in (81) and (82) suggest that /=da/, /=mi/, /=ga/ and /=ža/ are optionally cliticized.[4] Assuming that cliticization is either an all or nothing rule, and that cliticization causes the postpositions to be included in the phonological words, both patterns can be accounted for as in (83).

(83) ['kiža]ω [ɖa]ω [mi]ω

[[kiža]ω 'ɖa mi]ω

It also accounts for the fact that the following stress pattern is unattested.

(84) *[ki'žaɖami] (month Time Aff)

'a month'

Thus, there is optional cliticization of these four postpositional segments.

An alternate account would be to claim that stress is either penultimate or initial. However, this analysis cannot account for the fact that most postpositional polysyllabic words do <u>not</u> have initial stress.

There is one other issue of stress to deal with. In some situations, stress is on the last syllable.

SQ puts primary stress on the last syllable of a focused element in yes-no questions, which overrides any other primary stress on this element. The morpheme /=ču/ optionally follows this element, but when /=ču/ is

absent, then stress shift is the only indication of focus.

(85) /wasi-'muN =ču 'ri-Ngi/
house-Goal=YNQM go-2Pres
'Are you going <u>home</u>?'

/wasi-'muN 'ri-Ngi/
house-Goal go-2Pres
'Are you going <u>home</u>?'

/wa'si-muN ri-N'gi=ču/
house-Goal go-2Pres=YNQM
'Are you <u>going</u> home?)

/was'si-muN ri-N'gi/
house-Goal go-2Pres
'Are you <u>going</u> home?'

Compare:
/wa'si-muN 'ri-Ngi/
house-Goal go-2Pres
'You are going home.'

Also, in contractions, the stress often remains on the syllable where it would have been were there no contraction even though the final syllable has been eliminated or reduced. The following examples show that contracted words can also have penultimate stress. (86) shows partial deletion of the final syllable, (87) shows total deletion.

	<u>Uncontracted</u>	<u>Same Stress</u>	<u>Penultimate Stress</u>
(86)	/ima-'da-biš/ how-Acc-Conj 'anything'	/ima-'daš/	/i'ma-daš/
	/parla-N'gabuG/ talk-Purp 'in order to talk'	/parla-N'gauG/[5]	/par'la-NgauG/

/ñuku'či-buG/ /ñuku'či-G/ /ñu'kuči-G/
1Pl-Poss
'our'

(87) /a'ži=ču 'ga-Ngi/ /'aži 'ču-Ngi/
well=YNQM be-2Pres
'how are you?'

/'ima 'šuti 'ga-Ngi/ /'ima š'ti-Ngi/
how name be-2Pres
'what is your name?'

/may-'muNda 'ga-Ngi/ /'may muN'da-Ngi/
where-Src be-2Pres
'where are you from?'

The following examples show another morpheme, /=ma/, that is is analyzed in other dialects as a suffix (Jake 1985, Burns 1975 and Ross 1963).[6] However, its stress pattern suggests that it is not a suffix in SQ. The symbol (,) is used here to indicate secondary stress.

(88a) /mara-,guna'=ma/ /mara-'guna,=ma/
child-Pl=Wit
'certainly the children'

(88b) /mi,ku-na'=ma/ /mi'ku-na,=ma/
eat-Inf=Wit
'certainly eating'

(88c) /ub,ya-na'=ma/ /ub'ya-na,=ma/
drink-Inf=Wit
'certainly drinking'

If /=ma/ were a suffix, the following stress pattern would be expected. However, this is unattested.

(89) /*mara-gu'na-ma/ 'certainly the children'

If it were like the morphemes, /=da/, /=mi/, /=ga/ and /=ža/, the following pattern, which is also unattested, would be expected.

(90) *[[mara-'guna]$_{\omega}$=ma] 'certainly the children'

The above solutions are unsatisfactory, and it appears likely that /=ma/ is a separate word.

Consideration of secondary and phrasal stress adds further evidence for this analysis. Consider, first, words fitting into the normal penultimate stress pattern.

(91) /'tawga riGsiška-'guna/
many friend-Pl
'many friends'

Secondary stress occurs on every second syllable to the left of the primary stress.

(92) /'tawga riG,siška-'guna/
many friend-Pl
'many friends'

Therefore secondary word stress is not an adequate explanation for the second phrase of examples (88a-c) above; secondary word stress would not occur to the right of the primary stress. Therefore, the secondary stress in (88a-c) must be phrasal.

When phrasal stress is considered, the following two cases are attested. The phrasal stress, indicated as ("), intensifies the word stress that is already present.

(93a) /'tawga riG,siška-"guna/
many friend-Pl
'many <u>friends</u>'

(93b) /"tawga pay-'guna/
many s/he-Pl
'<u>many</u> of them'

The stress patterns seen in (94a-c) are to be accounted for similarly. That is, word stress accounts

for the placement of the stress on the two words, and phrasal stress accounts for the relative degree of intensity.

(94a) /mara-"guna'=ma/ /mara-'guna"=ma/
child-Pl=Wit
'certainly the children'

(94b) /mi"ku-na'=ma/ /mi'ku-na"=ma/
eat-Inf=Wit
'certainly eating'

(94c) /ub"ya-na'=ma/ /ub'ya-na"=ma/
drink-Inf=Wit
'certainly drinking'

In other words, what appeared to be a contrast between primary and secondary stress in (88a-c) is better analyzed as a contrast between phrasal and non-phrasal primary stress. All available evidence points to /=ma/ being a separate word in SQ, even though it may be a suffix in other Quichua dialects.

NOTES

[1]Morphemes which begin with /-N/ such as /-Ngi/ and /-NgabuG/ become parts of two separate syllables. The /-N/ is the coda of the previous syllable. For this reason the stress will be indicated after the /-N/ in the cases where the morpheme is stressed.

[2]I am using the term postposition as used by Schachter (1985), Comrie (1981) and Kuno (1981) for Japanese case marking. This sense of the term here is not an adposition (preposition or postposition), but simply a morpheme which occurs postpositionally. Linguists have used several terms to describe these Quichua morphemes, but I do not believe we have really arrived at a good label. Jake (1985) and Ross (1963) label them suffixes. Cole (1985), Muysken (1977) and Burns (1975) call them independent suffixes. Cole (1985) also refers to them as enclitics. (If /=ma/ were truly an enclitic it could never stand on its own and receive stress as a separate word e.g. (94a-c).) I am not sure postposition is the best term, but I use it presenting us with a challenge to keep looking for the best label.

[3]It is interesting to note that in Conchucos Quechua of Peru similar stress patterns were observed. Three morphemes of Conchucos Quechua behave almost the same.

The SQ /=ža/, /=da/ and /=ga/ correspond to the Conchucos Quechua /-lla/, /-ta/ and /-qa/ (Stewart 1986:209).

[4] Levinsohn and Tandioy J., also, propose /=mi/ as a clitic in Inga, a Quechua language spoken in Colombia.

[5] This contracted form does not fit into the syllable structure of SQ. A well-formed non-contracted syllable in SQ cannot have two contiguous consonants in coda position or two contiguous vowels. Whether this is written as /u/ or /w/, the syllable structure is violated. But as a contracted form it is allowed to deviate.

[6] This morpheme is undoubtedly related to /-mari/, an evidential morpheme used in other Quichua dialects of Ecuador. In Imbabura Quichua the syllable /-ri/ is sometimes omitted (Cole 1982:164).

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